

## ANEXO 2 Cálculo balances de matéria

### Escenario 1

$$\text{Aserrín} = 27.999 \times \frac{1 \text{ kg de aserrín}}{3 \text{ kg de RSO}} = 9.333 \frac{\text{kg}}{\text{mes}} \text{ aserrín}$$

$$\begin{aligned} \text{Aire} &= 0,12 \frac{\text{m}^3}{\text{min}} \quad p = 1,225 \frac{\text{kg}}{\text{m}^3} \quad p = \frac{m}{v} \quad m = v \times p \\ m &= 0,12 \frac{\text{m}^3}{\text{min}} \times 1,225 \frac{\text{kg}}{\text{m}^3} = 0,245 \frac{\text{kg}}{\text{min}} \times 60 \frac{\text{min}}{\text{día}} \times 10 \frac{\text{días}}{\text{mes}} = 14,7 \text{ kg/mes} \end{aligned}$$

$$\begin{aligned} \text{CH}_4 &= \text{Factor de emisión} = \frac{9520 \text{ g de CH}_4}{\text{TON}} = \frac{9,52 \text{ g de CH}_4}{\text{Kg}} \\ \frac{9,52 \text{ g de CH}_4}{\text{Kg RSO}} \times 27.999 \frac{\text{kg RSO}}{\text{mes}} &= 258.990 \frac{\text{ch}_4}{\text{mes}} \end{aligned}$$

$$\begin{aligned} \text{N}_2\text{O} &= \text{Factor de emisión} \frac{1580 \text{ g de N}_2\text{O}}{\text{TON}} = \frac{1.58 \text{ g de N}_2\text{O}}{\text{Kg}} \\ \frac{1.58 \text{ g de N}_2\text{O}}{\text{Kg}} \times 27.999 \frac{\text{kg RSO}}{\text{mes}} &= 44238.4 \frac{\text{g de N}_2\text{O}}{\text{Mes}} = 44.238 \frac{\text{kg de N}_2\text{O}}{\text{Mes}} \end{aligned}$$

$$\begin{aligned} \text{CO}_2 &= \text{Factor de emisión} \frac{487.52 \text{ g CO}_2}{\text{Kg de residuo}} \\ \frac{487.52 \text{ g de CO}_2}{\text{Kg RSO}} \times 27.999 \frac{\text{kg RSO}}{\text{mes}} &= 13650 \text{ g Co}_2 = 13.650 \frac{\text{kg de CO}_2}{\text{Mes}} \end{aligned}$$

$$\begin{aligned} \Delta &= (27.999 + 9,333 + 88.2) \text{ kg/ mes} - (13.6 + 44.2 + 258.9 + 88.2 + 4,899) \\ &= 37420.2 \text{ kg/mes} - 5303.9 \\ &= 32116.3 \end{aligned}$$

$$\text{Vapor de agua} = 32116.3$$

### Escenario 2

$$\text{Aserrín} = 16.650 \times \frac{1 \text{ kg de aserrín}}{3 \text{ kg de RSO}} = 5.550 \frac{\text{kg}}{\text{mes}} \text{ aserrín}$$

$$\begin{aligned} \text{Aire} &= 0,12 \frac{\text{m}^3}{\text{min}} \quad p = 1,225 \frac{\text{kg}}{\text{m}^3} \quad p = \frac{m}{v} \quad m = v \times p \\ m &= 0,12 \frac{\text{m}^3}{\text{min}} \times 1,225 \frac{\text{kg}}{\text{m}^3} = 0,147 \frac{\text{kg}}{\text{min}} \times 60 \frac{\text{min}}{\text{día}} \times 10 \frac{\text{días}}{\text{mes}} = 88.2 \text{ kg/mes} \end{aligned}$$

$$\begin{aligned} \text{CH}_4 &= \text{Factor de emisión} = \frac{9520 \text{ g de CH}_4}{\text{TON}} = \frac{9,52 \text{ g de CH}_4}{\text{Kg}} \\ \frac{9,52 \text{ g de CH}_4}{\text{Kg RSO}} \times 16.650 \frac{\text{kg RSO}}{\text{mes}} &= 158.508 \frac{\text{ch}_4}{\text{mes}} \end{aligned}$$

$$\begin{aligned} \text{N}_2\text{O} &= \text{Factor de emisión} \frac{1580 \text{ g de N}_2\text{O}}{\text{TON}} = \frac{1.58 \text{ g de N}_2\text{O}}{\text{Kg}} \\ \frac{1.58 \text{ g de N}_2\text{O}}{\text{Kg}} \times 16.650 \frac{\text{kg RSO}}{\text{mes}} &= 26307 \frac{\text{g de N}_2\text{O}}{\text{Mes}} = 26.307 \frac{\text{kg de N}_2\text{O}}{\text{Mes}} \end{aligned}$$

$$\begin{aligned} \text{CO}_2 &= \text{Factor de emisión} \frac{487.52 \text{ g CO}_2}{\text{Kg de residuo}} \\ \frac{487.52 \text{ g de CO}_2}{\text{Kg RSO}} \times 16.650 \frac{\text{kg RSO}}{\text{mes}} &= 81172 \text{ g Co}_2 = 8117.2 \frac{\text{kg de CO}_2}{\text{Mes}} \end{aligned}$$

$$\begin{aligned} \Delta &= (16,550 + 5,550 + 88.2) \text{ kg/ mes} - (817.2+26.3+158.5+88.2+2,913) \\ &= 22288.2 \text{ kg/mes} - 4003.2 \text{ kg/mes} \\ &= 18285 \end{aligned}$$

$$\text{Vapor de agua} = 18285$$

### Escenario 3

$$\text{Aserrín} = 8.615 \times \frac{1 \text{ kg de aserrín}}{3 \text{ kg de RSO}} = 2.871 \frac{\text{kg}}{\text{mes}} \text{ aserrín}$$

$$\text{Aire} = 0,12 \frac{\text{m}^3}{\text{min}} \quad p = 1,225 \frac{\text{kg}}{\text{m}^3} \quad p = \frac{m}{v} \quad m = v \times p$$

$$m = 0,12 \frac{\text{m}^3}{\text{min}} \times 1,225 \frac{\text{kg}}{\text{m}^3} = 0,147 \frac{\text{kg}}{\text{min}} \times 60 \frac{\text{min}}{\text{día}} \times 10 \frac{\text{días}}{\text{mes}} = 88.2 \text{ kg/mes}$$

$$\text{CH}_4 = \text{Factor de emisión} = \frac{9520 \text{ g de CH}_4}{\text{TON}} = \frac{9,52 \text{ g de CH}_4}{\text{Kg}}$$

$$\frac{9,52 \text{ g de CH}_4}{\text{Kg RSO}} \times 8.615 \frac{\text{kg RSO}}{\text{mes}} = 82.01 \frac{\text{CH}_4}{\text{mes}}$$

$$\text{N}_2\text{O} = \text{Factor de emisión} \frac{1580 \text{ g de N}_2\text{O}}{\text{TON}} = \frac{1.58 \text{ g de N}_2\text{O}}{\text{Kg}}$$

$$\frac{1.58 \text{ g de N}_2\text{O}}{\text{Kg}} \times 8.615 \frac{\text{kg RSO}}{\text{mes}} = 13611 \frac{\text{g de N}_2\text{O}}{\text{Mes}} = 13.61 \frac{\text{kg de N}_2\text{O}}{\text{Mes}}$$

$$\text{CO}_2 = \text{Factor de emisión} \frac{487.52 \text{ g CO}_2}{\text{Kg de residuo}}$$

$$\frac{487.52 \text{ g de CO}_2}{\text{Kg RSO}} \times 8.615 \frac{\text{kg RSO}}{\text{mes}} = 419998 \text{ Co}_2 = 4199.9 \frac{\text{kg de CO}_2}{\text{Mes}}$$

$$\Delta = (8,615 + 2.871 + 88.2) \text{ kg/ mes} - (4199.9 + 13.61 + 82.01 + 88.2 + 1,507)$$

$$= 8706.0 \text{ kg/mes} - 5890 \text{ kg/mes}$$

$$= 18285$$

$$\text{Vapor de agua} = 2816$$